



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/020,854

12/14/2001

Steven L. Scott

499.710US1

6674

21186

7590

08/18/2006

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

P.O. BOX 2938

MINNEAPOLIS, MN 55402

EXAMINER

HALIYUR, VENKATESH N

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5

<b>Office Action Summary</b>	<b>Application No.</b> 10/020,854	<b>Applicant(s)</b> SCOTT ET AL.	
	<b>Examiner</b> Venkatesh Haliyur	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 1, 12, 22, 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed on 06/05/2006 under 37 CFR 1.131 has been considered but is ineffective to overcome the Yamazaki and Mazzola et al. reference.
2. The amendment filed 06/05/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The amendment filed on 06/05/2006 to claims 1,12,22,23 have been amended to include the limitation, *"wherein transfer of data associated with the memory request occurs independently of the processor that generated the communication request"* which is treated as new matter introduced in the amendment as the examiner cannot find this limitation disclosed in the specification on record.

At best the examiner can refer to lines 2-5, page 37, of the specification where it is recited as "since requests to the CI can be sunk independently of the CE's ability to make any forward progress on any transfers, there are no dependencies between accesses to the CI on REQO and packets sent by the C1 on either REQO or REQI" and similarly to lines 15-21, of page 37 of the specification where it is recited as "This buffering could be used to allow the remote SHUB to accept memory response packets

Art Unit: 2616

on RESPO, independent of its ability to send response packets to the master CE on RESPI, thus breaking the dependency between RESPO and RESPI” and similarly in line 1 of page 39 of the specification, where it is recited as “block transfers and AMOs independently of the OS after initial set up”.

Applicant is required to cancel the new matter in the reply to this Office Action.

3. Claims 1 – 27 are pending in the application.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki [US Pat: 5,649,141] in view of Mazzola et al. [US Pat: 5,740,171].

Regarding claims 1,12,22-24, applicant furnished prior art, Yamazaki, disclosed “Multiprocessor system for locally managing address translation table”, a method of address (node) translation [140 of Fig 2] for multiprocessor system [110-M of Fig 2] for connecting plurality of clusters [110-N of Fig 2] that communicates with each other via a

Art Unit: 2616

network and sending a memory request to the endpoint node, wherein the memory request is sent to the local processing element node if the endpoint node is the local processing element node [100-1 of Fig 2], and is sent over the network interconnect to the remote processing element node if the endpoint node is the remote processing element node [100-2 of Fig 2]. Yamazaki also disclosed defining a local connection table [130 of Fig 2, Figs 4A, 4B] configured to be accessed using the connection descriptor to produce a system node identifier for the endpoint node [item 130 of Fig 5], generating a communication request including the connection descriptor, in response to the communication request, accessing the local connection table using the connection descriptor [Fig 3] of the communication request to produce the system node identifier for the endpoint node [Fig 2, column 1, lines 50-67, column 2, lines 1-2, lines, 35-67, column 3, lines 1-9]. But, Yamazaki fails to disclose connection descriptor for a virtual connection in his invention.

However, Mazzola et al, in their invention of "Address translation mechanism for a high-performance network switch" disclosed accessing the local connection table (source) using connection descriptor of the forwarding tables to produce the system node (cluster) identifier for the endpoint node (destination) for virtual connections [Figs 4 & 5, column 3, lines 1-34, column 5, lines 36-50, column 10, lines 31-67].

Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the teachings of Mozzola et al. to include the method of using connection descriptor for virtual connections in the system of Yamazaki et al. for accessing the local connection table using the connection descriptor for virtual

connection to produce the system node identifier for the endpoint node when a communication request is made.

Regarding claim 2,4,13-15, Yamazaki disclosed the user processor issuing access request to memory and calculation process, such as assigning descriptors, defining a local connection table are performed by local process as directed by the software (operating system) in the local system [column 2, lines 59-65, column 3 lines 1-9].

Regarding claim 3, Yamazaki disclosed that assigning uses the connection descriptor to define a logical connection between a first virtual address space used by a local user process and a second virtual address space, whereby the connection descriptor allows the local user process to access the second virtual address space [column 1, lines 20-62].

Regarding claim 5,6,9,16,17,20, Yamazaki disclosed that the local connection table (forwarding) includes a plurality of entries which are indexed by the connection descriptor, with each entry providing the system node identifier for the endpoint node [column 2, lines 36-67, column 3, lines 1-9], but fails to disclose the associated virtual connection, validation, and a key for qualifying an address translation at the endpoint node.

However, Mazzola et al. disclosed the associated virtual connection, validation method, and a key for qualifying an address translation at the endpoint node [column 8, lines 4-60].

Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the teachings of Mozzola et al. to include the method of

using virtual connections, validation and a key for address translation in the system of Yamazaki et al. to determine the endpoint node of the virtual connection.

Regarding claim 7, 8,10,11,18,19,21,25-27, Yamazaki disclosed accessing, generating, sending are performed by a local user process [column 2, lines 59-65, column 3 lines 1-9], but fails to disclose that the communication request to a communication engine, accessing without intervention of operating system and servicing aging packets.

However, Mazzola et al. disclosed a communication engine (forwarding engine) for making forwarding decisions, DMA (direct memory access), monitoring aging packets and determining if entire contents of the frame (packets) have been sent [Figs 1-5, column 4, column 5, lines 1-35, column 9, lines 50-62].

Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the teachings of Mozzola et al. to include the method of using communication engine, aging bits, DMA for accessing, generating, sending communication request without intervention of operating system.

### ***Response to Arguments***

6. With respect to applicant's arguments, see remarks filed on 06/05/2006 rejection of claims 1-27 under 35 USC 103(a), that there is no connection descriptor to produce a system node identifier as claimed in the applicant invention, Examiner respectfully traverses applicants to col 10 lines 21-67 (Figs 4-6), where, Mazzola et al. disclosed

Art Unit: 2616

address translation mechanism that provides appearance (connection descriptor) to all ports associated with VLAN 1 of one switch processor (local) and all ports associated with VLAN 2 of another switch processor (remote) and also Yamazaki disclosed in col 4, lines 56-67, col 5, lines 1-36 (Figs 6-7) a method for memory access request for the address translation table by any of the processor in a plurality of clusters.

7. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In this case, both Yamazaki and Mozzola et al disclosed their respective inventions in the related art of address translation mechanism for computer networks and hence it is obvious for one of ordinary skill in the art to use the teachings of Mazzola et al. on providing connection appearance to both remote and local switch processor to access the address translation table in the system of Yamazaki to provide transfer of data associated with the memory requests of the any processor in the plurality of clusters that generated the communication request.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached @ (571)-272-3139. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

Art Unit: 2616

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

Patent Examiner

Venkatesh Haliyur

*vh*  
08/11/06

*Ricky Q. Ngo*  
RICKY Q. NGO  
SUPERVISORY PATENT EXAMINER